Educational Technology Research in and on Practice: An Analysis of Dissertations in a Doctoral Program

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The goal of this study is to broaden viewpoints about what practice-based scholarship related to educational technology may look like and what it can accomplish. Based on an analysis of 79 dissertations completed in a doctoral program, we describe the various types of problems studied, the instructional interventions that are designed to address and study these problems, and some of the challenges faced by practice-based researchers. We also discuss the complexities of practice-based research and implications for such research. While our data focuses on practice-based scholarship completed in one doctoral program, our findings are relevant to others involved in or embarking upon practice-based scholarship including doctoral students and their mentors, practitioners wishing to improve practice through research, educational researchers who collaborate with practitioners and leaders who may strive to elevate practice-based scholarship in dissemination outlets in the field.

Introduction

The field of educational technology needs research that is less focused on technologies and more focused on addressing educational challenges, needs, and problems related to teaching and learning (McDonald & Ventura, 2025; Schmidt et al., 2025). Researchers have advocated for research that "meaningfully impacts educational practice and outcomes" (Schmidt et al., 2025, p. 508) and is "grounded in reality" (Schneider et al., 2025, p. 570). Such research often involves collaborations between researchers and practitioners or constitutes research conducted by educational practitioners. Practice-based research is inherent in educational technology doctoral programs for professionals, or doctorates in education (EdD), which have been increasingly offered in the last two decades (Zhu & Kumar, 2023). Professional doctorates entail dissertation research that focuses on problems of practice, advances knowledge within specific contexts, and improves practice (Hochbein & Perry, 2013; Kumar & Dawson, 2018). Research conducted by doctoral researchers who are situated within educational contexts has to take into consideration the stakeholders involved, the needs, opportunities, and limitations of each unique context, and yet adhere to the academic rigor expected in their programs. In this article, we illustrate various ways in which problem-based research is conducted in practice, based on the analysis of 79 dissertations from an online doctoral program in Educational Technology. Specifically, we focus on the problems of practice studied, the interventions implemented by researchers in practice, and how the researching professionals position themselves as researchers in their practice.

Our intentions are to broaden viewpoints about what practice-based research related to educational technology may look like and what it can accomplish in various educational contexts and geographical regions, highlight the value of studying problems of practice in educational technology research, position practice-based research as continuous improvement that can impact practice, and call attention to the complexities of practice-based scholarship. While our data focuses on practice-based

scholarship completed in one doctoral program, we hope our findings can help those involved, or potentially involved, in practice-based scholarship, including doctoral students and their mentors, practitioners wishing to improve practice through research, and educational researchers who may collaborate with practitioners and leaders of dissemination outlets in the field.

Researching Problems of Practice in Professional Doctorates

The Carnegie Project on the Education Doctorate defines a problem of practice as "a persistent, contextualized, and specific issue embedded in the work of a professional practitioner, the addressing of which has the potential to result in improved understanding, experience, and outcomes" (CPED, n.d., Design-Concepts section, para. 6). Problems of practice have been characterized as complex, unclear, authentic, local, messy, highly contextualized, and persistent (Dawson & Kumar, 2014; Hochbein & Perry, 2013; Ma et al, 2018; Storey & Hesbol, 2014). They exist within doctoral students' "own spheres of influence" (Arslan-Ari et al., 2018, p. 442) or in contexts described as "nested circles around students that begin closest to the center in the specific job site (e.g., classroom)," and moving "outward to the institution within which the job is located (e.g., school), to the community" (Beltzer & Ryan, 2013, p. 201). In some education doctorates, the problem of practice is determined by doctoral students in collaboration with others in their practice, and a sponsor within their professional context is sought to ensure support and circumvent challenges (Pape et al., 2022). Problems of practice can be derived from a "real-world dilemma" that doctoral students face due to events, policies, or procedures in their practice, or a "felt difficulty" experienced by doctoral students in their practice (Ma et al., 2018, p. 17).

Prior studies that have analyzed EdD dissertations have focused on the types of problems studied, the types of questions posed to address problems of practice, the evidence provided to frame problems of practice, the literature review, the research methodologies used, the validation techniques used, the impact of EdD dissertations, and their alignment with dissertation guiding principles (Archer & Hsiao, 2023; Beltzer & Ryan, 2013; Dawson & Kumar, 2014; Kumar et al., 2022; Leach et al., 2021; Ma et al., 2018; Storey & Hesbol, 2014). Questions related to problems of practice have focused on existing conditions or ongoing initiatives, and aimed to generate solutions, conduct evaluations of existing or completed initiatives, or to implement initiatives that can improve outcomes (Beltzer & Ryan, 2013). Researchers have described a diversity of problems (Gilham et al., 2019), and some studies have identified themes among problems of practice, such as supporting marginalized learners or groups, increasing professional development quality, and enhancing student learning and empowerment (Ma et al., 2018; Zambo, 2014). Dissertations have also been classified as directly or indirectly embedded in doctoral students' professional contexts (Dawson & Kumar, 2016).

Literature, theories, conceptual frameworks, and anecdotal or secondary data have been used in EdD dissertations to provide evidence for problems and research designs, and to design interventions (Dawson & Kumar, 2014; Kumar et al., 2022; Leach et al., 2021). EdD dissertations may employ quantitative, qualitative, and mixed-method approaches, but experimental designs are rare due to the nature of the research and the sample sizes (Kumar et al., 2022; Leach et al., 2021). Some EdD programs have adopted specific methodologies to align with the problems of practice experienced by their doctoral students and their specific contexts (Adams et al., 2014; Arslan-Ari et al., 2018). EdD dissertation research has informed and strengthened educational decision-making and policy; guided and enhanced teaching, instructional design, professional development, and other educational processes; led to the adoption of evidence-based approaches and technology implementation; and supported student learning (Dawson & Kumar, 2016; Kumar & Dawson, 2014; Ma et al., 2018).

Dissertations in the EdD in Educational Technology

The last two decades have seen a proliferation of EdD programs in Educational Technology, Learning Design and Technology, Instructional Design and Technology, and related fields offered in various formats (online, hybrid, etc.) in the United States (Zhu & Kumar, 2023). They enroll educators, administrators, leaders, teachers, instructional designers, and others in educational

contexts and entail dissertation research focused on problems of practice, sometimes described as applied dissertations or dissertations in practice (Zhu & Kumar, 2023). The EdD in Educational Technology at the University of Florida enrolls professionals across disciplines and educational environments in the US and overseas, is offered online with three short on-campus sessions, and consists of online coursework followed by qualifying exams and a five-chapter dissertation. The curriculum is purposefully designed to help doctoral students become researching professionals who identify problems of practice, select relevant theory and research that they apply in their professional contexts "to develop solutions to address the problems, evaluate how successful the solutions were to addressing the problems, and plan future steps to improve their practice based on what they learned" (Kumar & Dawson, 2018, p. 76).

During their first semester, doctoral students reflect on a problem of practice and articulate an area of specialization that intersects with educational technology and their discipline. This area of specialization frames their activities during coursework as they read and critique prior research, write a literature review, identify relevant curricular designs and research methodologies, create conceptual frameworks, and plan or engage in small practice-based research projects. Due to the real-world focus of the curriculum, doctoral students sometimes address their initial problems of practice as they apply what they learn during these course activities and identify other problems of practice by the time they begin their dissertation two years later. Their larger area of specialization often remains the same, but their focus and research questions change.

Given the focus on problems of practice and the interdisciplinary nature of educational technology doctoral students' research, we emphasize "deep knowledge of prior research and research methods in their areas of specialization, and knowledge of ethical behaviour and appropriate research methods in the context of their practice" (Kumar & Dawson, 2018, p. 18). Doctoral students must carefully consider contextual, policy-related, local, political, social, and equity issues, as well as their own roles in their contexts, in the design of practice-based research and in their writing. Scaffolded course activities and projects thus also focus on helping doctoral students communicate these various areas in their scholarship as they hone their writing and research skills. Previous dissertations in our program serve as exemplars of such scholarship and contribute to doctoral students' understanding of how to apply our dissertation guidelines, which are as follows:

1. The dissertation is embedded in the student's professional practice or context.

2. The dissertation addresses a problem in the student's professional practice and is related to Educational Technology.

3. Relevant literature is used to rationalize the problem, frame the study and, when applicable, support the design of interventions.

4. The problem is framed with relevant research questions that are addressed using appropriate methods.

5. The dissertation demonstrates adequate rigor.

6. The dissertation discusses implications for professional practice at three levels – the student, the immediate context, and the field (Dawson & Kumar, 2014).

Following an initial analysis of 23 dissertations in our EdD program, we classified them as directly embedded and indirectly embedded (Dawson & Kumar, 2014) and later added the category unembedded. Directly embedded dissertations were a natural part of doctoral students' practice, and research was conducted within their practice. Indirectly embedded dissertations were not a natural part of doctoral students' practice, but results could be applied within their practice. Both directly and indirectly embedded dissertations were driven by problems of practice in students' contexts, and indirectly embedded dissertations were often completed by doctoral students in leadership roles. Unembedded dissertations were conducted outside students' immediate practice because of lack of support or access for research in their professional context (Kumar & Dawson, 2018). Doctoral students completing dissertations after 2018 have read our scholarship and make decisions based on their specific situation that falls within these categories. We have continued to conduct dissertation

analyses (Kumar et al., 2022) to understand the complexities of doctoral students' practice-based research and improve our research curriculum and mentoring.

Research Questions

To "provide researchers with broadened viewpoints on how to carry out effective Practice-based Scholarship (PBS)" (McDonald et al., 2025, p. 1), this article includes results from our recent analysis of 79 dissertations from the first five cohorts of our program and was driven by the following research questions:

1. What types of problems were studied in EdD dissertations?

2. What kinds of interventions were used to address these problems?

3. How did the researchers embed the studies in their practice and address positionality when conducting research in their practice?

4. What implications for research are presented?

Methodology

Seventy-nine dissertations completed by the first five cohorts in the online EdD program were collected and analyzed. Document analysis methods, involving data selection rather than collection (Bowen, 2009), were used to compile data on research contexts, problems of practice, research questions, literature reviewed, theoretical/conceptual frameworks, interventions, research designs, positionality, and implications. A spreadsheet with columns for each of these areas was created, along with a column for notes or comments.

Two of the four researchers had developed the program and its guiding principles, mentored several dissertations, authored a book describing the program (Kumar & Dawson, 2018), and published many articles about the program. They had also interacted as course instructors and during on-campus sessions with all students in each cohort whose dissertations form the data corpus. The first author also served as the initial advisor for all students during the first year of the program before a dissertation chair was assigned. These two authors have a vested interest in the program, its reputation, and the success of each student. Recognizing that completely bracketing bias when so closely connected to a program is impossible, the two other researchers were individuals not involved with the program.

All four researchers independently read two of the 79 dissertations, selected data for the areas of focus, and met to discuss the data and how it should be entered into the spreadsheet. The remaining 77 dissertations were then purposefully assigned to dyads comprising one researcher associated with the program and one researcher not familiar with the program or dissertations, to reduce bias. Additionally, problems with document analysis related to retrieval and biased selection (Bowen, 2009), were addressed by (a) including all completed dissertations in the five cohorts in the sample and (b) reviewing the entire dissertation, not only abstracts or the table of contents.

After each researcher within a dyad had entered all the data for every assigned dissertation independently, the dyad met to discuss possible codes for each column of selected text or codes already entered (e.g., research design had been coded as quantitative, qualitative, mixed methods) in the spreadsheet, along with their comments or notes about the process. All four researchers met twice during the process to discuss any differences in the way data was being selected or coded. Once the spreadsheet was finalized, each column in the spreadsheet was carefully reviewed and thematically analyzed by two researchers. For example, the problem of practice column that included text from each dissertation was coded independently

by two researchers who assigned codes to denote the problem. Finally, a third researcher reviewed all the codes and themes before they were finalized. This article presents the analysis of problems of practice, interventions, positionality, and the implications. The term “researcher” in the results and discussion hereafter refers to doctoral students who are practitioners or professionals in a professional doctorate or EdD program and whose research is grounded in their practice.

Findings

The seventy-nine dissertations were completed by professionals who worked in various environments: post-secondary environments (N=37; 20 in universities & 17 in community colleges), K-12 education (N=35), education companies (N= 4), corporate environments (N=2), and military (N = 1). They were teachers (19), administrators (10), technology integration specialists in K-12 environments (6); faculty (20), administrators (5), student advisors (1), librarians (3) and Instructional designers/in faculty support roles in higher education (8); technology integration specialists (3) or administrators (1) in education companies; and instructional designers in corporate environments (2) and the military (1). See Table 1.

Educational Technology is the discipline that binds each dissertation. Because Educational Technology is interdisciplinary, we do not provide a detailed description of students’ professional disciplines in our analysis. Students worked in fields as varied as nursing education, libraries, dental health, mathematics, art, physical therapy, physics, student advising, medical simulation, academic writing, foreign languages, healthcare communication, instructional design in for-profit, educational, or not-for-profit entities, etc.

Table 1

Professional contexts and professional roles

Researcher's professional context	Researcher's role	N
K-12		
	Administrator	10
	Teacher	19
	Technology integration Specialist	6
Post Secondary		
	Administrator	5
	Student Advisor	1
	Faculty member	20
	Instructional Designer/Tech Integration/Faculty Support	8
	Librarian	3
Education Companies		

	Technology Integration specialist	3
	Administrator	1
Corporate	Instructional Designer	2
Military	Instructional Designer	1

Researching Problems of Practice

The problems of practice researched in dissertations across contexts fell in five broad categories: Problems related to student learning, interactions, and skills (N=35); teacher technology integration in teaching and learning (N=19); faculty technology integration in teaching and learning (N=18); technology use by other stakeholders such as parents, administrators, and principals (N=5); and employee performance outcomes (N=2).

Problems focused on Student Learning, Interactions, and Skills

Researchers described problems of practice related to student learning outcomes, student engagement, attrition, technology use, digital and information literacy skills, under-represented populations, and intercultural differences (Table 2). Challenges with student learning outcomes included students' mastery of physics concepts, geometry, mathematics, and English language vocabulary in K-12 contexts; and development of critical thinking skills, metacognitive skills, self-regulation, writing skills, problem-solving skills, intercultural competence, and psychomotor skills in higher education and K-12 contexts. Lack of student engagement in both virtual classrooms and face-to-face classrooms was found to influence student learning processes and outcomes, and graduate student attrition in online education was a problem three researchers sought to analyze and try to address in their practice. Researchers also focused on the under-representation of female students or students with certain backgrounds in STEM (Science, Technology, Engineering and Mathematics) contexts and on how intercultural differences posed a challenge for online students. Two researchers studied the use of mobile technologies and social media in their attempt to understand the problem and develop policies around use. The need for students' digital literacy skills while achieving content mastery and students' information literacy skill development in graduate courses were challenges faced by two teachers and two librarians, respectively.

Table 2

Problems focused on student learning, interactions, and skills

Problems related to:	**N**
Student learning outcomes	16
Student engagement	5
Student attrition	3
Underrepresented student populations and access	3
Student technology use (e.g., social media; mobile phones)	2

Student digital literacy skills	2
Student information literacy skills	2
Student intercultural differences and interactions	2

Problems Related to Teacher Technology Integration

Researchers (N=7) described challenges in their practice with the integration of technology for teaching and learning (e.g., simulations, Interactive Whiteboards) within specific disciplines, the integration of specific technologies or frameworks that had been adopted by the institution (e.g., iPads, Universal Design for Learning), and the need for teacher professional development in technology integration. For example, a teacher overseas worked at a school that needed a technology solution for their students, which would provide them not only with the software they needed to complete projects, homework, and classwork, but also an interactive environment. They implemented professional development in Google Apps for teachers at their school and studied its use. Other researchers (N=12) highlighted the need to assess the current state of technology implementation or barriers to adoption in their institutions before professional development decisions could be taken. Some examples of these problems are teacher challenges after a 1-1 school required Office 365 use; teacher challenges using a new Student Information System; student experiences following a school makerspace implementation; barriers to adopting games in instruction; teachers' redesign of classroom instruction to integrate iPads.

Problems related to Faculty Technology Integration

Similar to the previous theme that pertained to K-12 contexts, this theme includes problems of practice in post-secondary environments related to faculty integration of technology and technology related strategies (N=9) for teaching and learning within various disciplines (e.g. simulations, blended learning); and challenges or barriers with faculty or librarian adoption of technologies and technology-related strategies and faculty development needs (N=9). Some examples are problems with librarians' adoption of a new information literacy framework for digital scholarship instruction, changes in instructors' teaching practices when integrating new technologies, faculty concerns with how to address academic dishonesty, faculty difficulties designing online rubrics or redesigning instruction for active learning, and faculty concerns after they began teaching completely online courses.

Problems related to other Stakeholders' Technology Use

Five dissertations addressed problems of technology use by various stakeholders. Two described the lack of guidance for parents' technology use that influenced their children's success, while one described the principal's challenges with electronic data use. Lack of knowledge about social media use for outreach by an institution and about technology use for personalized advising were described as problems in two dissertations.

Problems Related to Employee Performance and Evaluation Processes

The last and final category pertained to challenges with employee productivity and performance, and the absence of consistent evaluation processes for employee performance within an organization. These two researchers explored how technology integration and gamification could address these challenges.

Contexts and Embeddedness of Dissertations

Of the 79 dissertations, 76 of the problems described were experienced by researchers in their own professional contexts. Of these, 65 struggled with these problems in their immediate practice. For example, teachers described challenges with student learning outcomes in their classes, a librarian struggled with scaling up information literacy instruction for large numbers of students, and a department chair wanted to understand faculty challenges and perceptions of implementing active learning in their department. The other 11 researchers experienced these problems in their institutional context, but not in their immediate roles at their institutions. For example, a teacher studied how other teachers in their school were integrating iPads for instruction, and a faculty member focused on barriers to faculty adoption of a technology initiative at their institution. The three researchers who did not study a problem of practice in their own context did so because they were unable to conduct research in their own practice.

Research for the 79 dissertations was conducted in K-12 contexts (N=40), post-secondary contexts (N=36), corporate contexts (N=1), public health (N=1) and in online learning communities (N=1). Five researchers working in education companies, corporate environments, and post-secondary environments also conducted their research in K-12 contexts. The K-12 environments included private, public, virtual, magnet, and charter schools; pre-K to high school; schools as well as school districts; rural, suburban, and urban environments, and multiple disciplines (e.g., art, mathematics, physics, English, history, science). The post-secondary contexts encompassed two-year colleges and community colleges; private, public, and for-profit universities; and various disciplines (e.g., nursing, mathematics, physical therapy, business, English, science).

Embeddedness of Dissertations

As described earlier, dissertations in our program are classified as directly embedded, indirectly embedded, and not embedded based on whether the study falls within a natural part of a researcher's practice or not (Kumar & Dawson, 2018). Of the 79 dissertations analyzed, 45 were found to be directly embedded, i.e., their research was implemented in the professional context as a natural part of their practice. For example, an instructional technology specialist at a university was assisting in the creation of a learning analytics dashboard that could help faculty with their teaching. They brainstormed with faculty during a learning analytics workshop and later conducted interviews with faculty using sample dashboard screenshots to identify elements that would be most useful to faculty in the dashboard. Another example is that of an ESL elementary teacher whose classroom included an Interactive Whiteboard, but they were unsure of how to integrate them in their teaching beyond presentation. They developed interactive lessons grounded in prior research, collaborated with fellow teachers to implement them in ESL teaching, and collected data on teachers' experiences and student learning.

Indirectly embedded dissertations are driven by problems in researchers' practice, but the researchers implement research that is not a natural part of their practice. Twenty-six dissertations that were analyzed were indirectly embedded. For several of these researchers, their problem of practice could best be addressed by learning from other contexts or institutions similar to their own, where these problems had been resolved, or from experts who had experience in the area. For example, a learning systems developer was beginning a project to integrate medical simulations into the curriculum, but this involved significant costs, revisions to the curriculum, and professional development. They conducted a modified Delphi Study with an expert panel in their discipline to learn more about various aspects of simulation integration and include best practices in their own implementation. Similarly, a district leader for school improvement found that new technologies had been introduced at schools for communication with parents, but they struggled to use these technologies. The leader implemented a survey with the parents to learn more about parents' use, preferences, and barriers to using the various technologies, so that steps could be taken to increase parent engagement. Although this was related to improving their practice, the research was not a natural part of their practice.

Eight of the 79 dissertations were not embedded in researchers' practice. Three of these researchers worked in corporate environments or education companies, one was a teacher, and one was a community college faculty member. All five were unable to conduct research in their practice for various reasons. Two researchers were administrators who wished to avoid conflicts of interest at their institutions, and one researcher experienced job changes during the program. Although four of these dissertations were driven by problems in researchers' own practice, the research itself could not directly inform their

practice. For example, a technology integration specialist at an education company had found that learning technologies had not been developed to support underrepresented learner populations. They attempted to study the motivations, attitudes, needs, and goals of these learners in higher education and build personas that could eventually guide the design of the user experience of learning technologies.

Research Design, Positionality, and Challenges in Practice-based Dissertations

The dissertations included a variety of research designs to address problems of practice. Thirty-two used qualitative approaches (e.g., case study, phenomenology) and encompassed interviews, observations, content analysis of online discussions/social media posts, artifact analysis, document analysis, etc. Thirty engaged in mixed methods such as sequential exploratory or explanatory designs or concurrent mixed methods. In the 17 quantitative dissertations, the main sources of data were surveys and assessments, with analyses including descriptive statistics, correlations, exploratory or confirmatory factor analysis, t-tests, ANOVA, ANCOVA, MANOVA, multiple regression etc. Only three quantitative dissertations used a quasi-experimental design and one an experimental design. This is because practice-based educational technology dissertations in our program often took place in the context within which the problem of practice was situated and aimed to improve teaching and learning processes or outcomes within that context. They involved limited numbers of participants already present in that context, and if conducted outside researchers' professional contexts, included convenience samples. Additionally, the research questions were contextually specific rather than broad and pertaining to the larger discipline.

Instructional Interventions in Practice-based Research

Interventions to address problems of practice in our online EdD program are mainly related to teaching and learning processes. Thirty-seven of the 79 dissertations included the design of instructional interventions. Twenty-seven of these entailed the development and implementation of curriculum and instructional materials that included specific strategies, technologies, multimedia or processes in instructional activities (e.g., gamification, blended learning) and the development, customization and implementation of various technology-related applications. Ten of the interventions involved the design and implementation of professional development in various formats (e.g., modules, workshops) in K-12 and higher education contexts.

All thirty-seven interventions were grounded in theories, theoretical frameworks, and prior research, and in pilot studies or available data in some cases. Researchers explicitly justified the decisions taken during intervention design and implementation at every stage of the process. Chapter 2 of all the dissertations entailed a traditional dissertation literature review that framed various aspects of the study and informed the research, corresponding to dissertation guideline #3. Additionally, beginning with our fourth cohort (N=46 dissertations), dissertations used a conceptual framework that connects practice, theory, and methodology; consists of selected elements from the literature; and aligns all aspects of the study (Kumar & Antonenko, 2014). These conceptual frameworks also guided any interventions that were implemented in dissertations.

For example, to incentivize employee performance and address a lack of motivation in a remote autonomous environment, a leader conducted a workplace analysis, reviewed literature related to gamification, and first created a conceptual framework based on self-determination theory, the MDA design framework, flow theory, and other gamification elements. Their dissertation describes the gamification design process and its implementation in the employee portal, grounded in the conceptual framework, and the results of their research on employee performance indicators and intrinsic motivation following the use of the gamified portal. In another example, a high school computer science teacher experiencing low retention and lack of student engagement in computer science courses conducted a literature review on active learning, blended learning, and computer science education to create a conceptual framework based on active learning, flipped learning, and the Cognitive Theory of Multimedia Learning. Their design and implementation of a flipped computer science unit spanning three weeks was grounded in this framework that also informed research on student learning with the unit.

Positionally in Practice-based Research

Corresponding to dissertation guideline #5 that the dissertation should demonstrate adequate rigor, 72 of the 79 dissertations analyzed either included a separate section on rigor (e.g., validity, reliability) or trustworthiness (e.g., transferability, credibility), depending on the type of research approach, or explicitly explained these elements in the research design. In the context of rigor and trustworthiness, researchers were also cognizant of their role in their professional contexts during different parts of the research process. For example, a teacher designed instructional materials and lesson plans with colleagues that they implemented in all their classrooms in a certain grade. However, they only collected data from the implementation in peer classrooms, not their own. Likewise, an instructor studied another section of their own course taught by a colleague, instead of their own course, to avoid studying their own students. In another context where the researcher was also an administrator, although participation in employee professional development designed by the researcher was voluntary, the researcher ensured that employee performance evaluations during that year were conducted by another administrator.

Additionally, the practice-based researchers also wrote positionality or subjectivity statements to clarify their roles within their contexts and how these influenced their research. These statements also discussed prior experiences, beliefs, assumptions, biases, and predispositions of researchers and how these played an important role in every aspect of the study, from conceptualization to implementation, analysis, and interpretation. It is important to note that subjectivity or positionality statements are important in practice-based research regardless of the type of research design or whether the research is directly embedded, indirectly embedded, or non-embedded.

These 72 dissertations addressed positionality in various ways - by writing sections in Chapter 1 or Chapter 3 titled 'Subjectivity statement', 'Researcher subjectivity', 'Professional background and assumptions', 'Professional background and beliefs', 'Role of the researcher' or 'The Researcher', 'Researcher background', 'Researcher influence', 'Researcher Bias', 'Researcher statement', 'Researcher reflexivity', 'Role as researcher and facilitator', 'Professional role and bias', 'Librarian as researcher', 'Teacher-researcher reflection', 'Reflections on role as practitioner-scholar, 'Epoché Statement,' 'Role and ethical considerations', and 'Positionality statement.'

Of the seven dissertations that did not address positionality, five were quantitative dissertations using experimental, quasi-experimental, and survey designs, and two used mixed methods approaches.

Challenges Faced During Practice-based Research

While challenges are common in all research, the real-world nature of practice-based research offers specific challenges. These were reflected in the dissertations in our program and encompassed challenges with the research study as well as personal challenges.

Although researchers who worked in for-profit contexts were able to identify problems of practice, they were often denied permission to study their practice (e.g., due to confidentiality agreements) or denied access to data. These researchers conducted unembedded or partially embedded dissertations. Other researchers who had identified problems of practice during their initial years in the program and developed dissertation proposals based on those problems sometimes faced policy changes, changes in funding, and a lack of support for certain initiatives at their workplace, which meant the programs or problems they planned to study were no longer relevant or supported within their contexts.

Researchers also faced challenges during the implementation of the research. For example, a carefully designed instructional unit did not go as planned due to other events at a school that impacted the time available for implementation. Similarly, professional development that had been designed and planned was not attended by all the teachers who planned to attend it due to another meeting at the same time. Participant engagement and completion was a challenge. This was not only the case with survey response rates, but also within instructional interventions. For example, lack of faculty participation in faculty development or non-completion of faculty development modules, and students' persistence in a course, or failure to engage in

all course assignments and activities, hindered research plans. Likewise, student absences from classes impacted their participation in pre- and post-tests. These challenges mainly impacted the sample size in these studies, which could not be controlled, just as the timing of when an instructional unit was offered in the curriculum could not be changed. Finally, a few dissertations were completed as the COVID-19 pandemic began. Instructional interventions proposed in these dissertations that would have been face-to-face could not be implemented, and data could not be collected in practice, leading to changes in research approaches.

Additionally, researchers experienced role changes or changes in responsibilities within a context and job changes during their dissertations, which required them to revise their focus or research approach, or entailed changes to problems of practice.

Implications of Practice-based Dissertations

Our final dissertation guideline recommends that dissertations discuss implications at multiple levels – for the researcher/professional, for their immediate context, and for the field. This section describes the implications included within dissertations based on our analysis; it does not include other impacts or developments that might have resulted from the research.

Implications for the Researcher/Professional

Given our focus on developing researching professionals in our doctoral program, researchers' reflections on how their dissertation and research influenced their thinking about their practice was integral to the dissertation process. Depending on the embedded nature of the study, methodology, and each researcher's comfort level with making their reflections explicit, this section occurred only in 53 dissertations. Teachers and instructors who studied their own practice were particularly reflective about how their teaching or instructional materials could be improved moving forward. For example, teachers described approaching problems differently, how they would change their approach to feedback, an increased understanding of the student perspective, an increased understanding of parent needs, and being better equipped to support students. Concrete examples include a teacher who shared a revised plan for implementing course activities based on their research outcomes, and a teacher who detailed how they had already implemented the strategies they had observed other teachers using in their research.

Others studying professional development for teachers or faculty development also reflected on their biases and assumptions about participants and what they had learned following the research. For example, a lack of training in their context had led an administrator to assume teachers were not using a specific technology meaningfully in their classrooms, but the research results indicated otherwise. Another professional responsible for teacher professional development realized during their dissertation that buy-in and collaboration with teachers was essential to creating professional development that would address their needs. A faculty developer discovered that they had made certain foregone conclusions about how technology should be used, but following their research, they developed a greater understanding of teaching practice and assessment processes at their college.

Implications for Practice/Professional Contexts

Of the three types of implications recommended in our guidelines, the implications for researchers' professional contexts and practice (N=75) were the most comprehensive but also varied greatly. Some of these implications were unique to that specific context, that implementation, and occasionally, possibly transferable. Others additionally included implications for others in similar contexts who might face comparable problems of practice or attempt to address similar problems. The embedded, partially embedded, or unembedded nature of dissertations influenced the depth of these implications; for instance, unembedded dissertations provided few implications for practice or the immediate context. Dissertations that researched teacher professional development or faculty development were the most detailed and included sections or tables about how various elements of the previous offering could be redesigned and implemented based on the results.

The implications specific to each researcher's immediate context often described in detail how research results would inform future actions, strategies, and instruction in that context. Some examples of these were - a social media plan for their organization, a faculty guide for implementing blended learning in a college, a plan for the continued implementation of a software and professional development for school staff, recommendations for a school district to implement a digital backpack program, a professional development module to be implemented at a school district, a step-by-step plan for integrating a specific educational framework in a teacher education program, a detailed process and timeline to teach users to use a product, and concrete strategies at various levels (district, school, class) for engaging parents using communication technologies. The research sometimes revealed issues and concerns the researchers had not previously considered in technology implementation or professional development, such as time to learn about technology, isolation faced by teachers, or access to technology for parents, which led them to make concrete suggestions for their contexts. Likewise, when studying student attrition in online programs at their institution, an administrator found that most of the students had certain demographic characteristics, leading them to create a plan for how those students could be supported better by the institution.

In terms of implications for others in similar contexts with the same goals or aiming to address comparable problems, the dissertations provided guidelines, recommendations, and suggestions. Examples of these are recommendations and suggestions for technology-related professional development, online faculty development, one-to-one computing initiative implementations, increasing faculty engagement in professional development, blended learning, flipped classrooms, increasing students' computer science engagement, increasing students' intercultural competence, and guidelines for data and technology use by parents, principals, and teachers.

Implications for the Field

Almost all the dissertations (N=77) included a section on the implications for the field or discipline, which often included implications for future research and referred to prior literature or research gaps. These sections varied due to the different foci and were only sometimes related to the professional context in which the research occurred. They correspond more to traditional dissertations, which contain sections and suggestions for future research.

Discussion

Dissertations in doctoral programs that represent research in and on practice are rarely read by practitioners or other researchers, unless the research is published in journals after graduation. At the same time, such research reflects real-life problems, often involves implementation in non-experimental settings, makes significant contributions in various environments, and provides valuable insights for practitioners and researchers aiming to understand and impact practice and policy. In this study, we presented an analysis of all 79 practice-based dissertations completed by the first five cohorts in an Educational Technology doctoral program to provide broadened viewpoints about what practice-based research related to educational technology may look like and what it can accomplish. In this section, we discuss the value of problems of practice in educational technology research, practice-based research as continuous improvement, and its impact on practice, and the complexities of practice-based scholarship.

Research that addresses problems of practice

The variety of contexts and roles in which these researchers worked during their dissertation research demonstrates that practice-based scholarship can take place in many contexts and can address a vast range of problems of practice. Practice-based scholarship in our program is grounded in real-world problems related to teaching and learning, processes, and policies in the researchers' professional contexts, and aims to address needs in those contexts (McDonald & Ventura, 2025; Schmidt et al., 2025). As discussed in prior literature, these problems were often specific to the context, unclear, and complex (Hochbein &

Perry, 2013; Storey & Hesbol, 2014), and the researchers uncovered related or systemic problems during the process. The problems of practice across educational technology dissertations completed between 2010 and 2020 were found to be similar, although the technological infrastructure (e.g., Interactive Whiteboards, iPads, simulations) in researchers' professional contexts changed over the years.

Our analysis revealed five broad categories into which the problems of practice for these dissertations fell, which we categorized by stakeholders (e.g., students, teachers, faculty, parents, administrators, principals, and employees). However, all the problems related in some manner to educational processes (e.g., student-teacher interactions, teacher-parent communication), strategies (e.g., blended learning, active learning), and outcomes (e.g., student learning, employee performance). In many cases, educational technology was part of the larger context or facilitated a process rather than being a focus in and of itself. For example, faculty were struggling to create rubrics for their assignments, and a one-time workshop on rubric creation was not fulfilling the need for professional development. A faculty developer thus designed an online faculty development module and studied how faculty learned to create rubrics for their course activities and assignments. Likewise, a nursing educator aiming to instill more empathy in students for patients implemented and studied a digital storytelling project with geriatric patients based on an established care framework.

Continuous improvement and impact on practice

Commonalities among all the problems in our study were that researchers experienced these problems in their immediate practice or larger institution (Beltzer & Ryan, 2013); selected problems that were timely in their current work context and that they were passionate about; and sought to better understand, improve, and/or solve the problem with their research. Often, the nature of their work was cyclical and constituted endeavors related to continuous improvement of teaching and learning processes, which is also indicated by the large number of embedded dissertations where the research was a natural part of practice. For example, a teacher found that various strategies they used in their classroom had not sufficiently engaged the students, so they attempted new strategies based on prior research, studied student outcomes, and reflected on how they would improve these moving forward. In another example, teacher learning from previous teacher professional development was studied, and revisions to the design were implemented for the next offering. The powerful impact of practice-based research on all aspects of the professional context in which it is conducted cannot be underestimated. It is often not a one-time endeavor, but a continuous process of engagement with recurring and new problems.

Our analysis identified three levels of implications within the dissertations corresponding to our dissertation guidelines. Implications for the practice or context were the most impactful and often resulted in explicit, action-oriented plans to improve or solve the problems of practice. Implications for the researcher were less common. This is likely because researchers (and their dissertation mentors) are not used to thinking about how a study can change the researcher. All practice-based dissertations present opportunities for researchers to reflect on how they think about their practice, their colleagues, their biases, and much more. This adds to the complexity but also to the richness of practice-based scholarship. Professionals who have engaged in dissertation research and adopted a systematic and evidence-based approach to studying problems of practice often continue to engage in such approaches or at least draw upon existing research to take decisions (Kumar & Dawson, 2014; Storey & Hesbol, 2014).

It is easy to conceptualize practice-based scholarship when it is conducted by practitioners such as the doctoral researchers in this doctoral program. In fact, a major problem for these researchers is identifying and then focusing on just one problem for their dissertations. This stands in direct contrast to educational research that involves an outside researcher bringing a solution to a problem that may or may not actually exist into a context and collecting data from practitioners and, possibly, students. Practice-based scholarship conducted by outside researchers must be in collaboration with practitioners and focus on problems identified by those practitioners to succeed and truly impact the context. The dissertations analyzed here can serve as examples of what such practice-based scholarship may look like. Although the researchers were prepared during their doctoral program to conduct the research, they collaborated with experienced faculty mentors and had access to resources (e.g., research software) at the university. Such dissertations also provide university faculty with opportunities to learn about

problems of practice and practice-based research in various educational contexts, thus helping them when they conduct educational research (Kumar & Dawson, 2018).

Complexities of practice-based scholarship

This study also sought to highlight complexities that can accompany meaningful practice-based work. Our analysis indicated that almost half the studies involved developing an instructional intervention aligned with theories or frameworks from prior literature, which requires a significant investment of time and careful detailing of instructional design decisions. In these dissertations, the interventions were designed for the context by a researcher who was an insider knowledgeable about that context. This presents a layer of complexity but also stands in contrast to many educational studies that involve an outside intervention that may not have intimate knowledge or include specific consideration of the context. A key component of practice-based scholarship is its contextual nature and focus on needs within the context. The dynamic nature of real-world contexts also means that those needs can change based on changes in policies, funding, and technology access, complicating research processes and requiring practice-based researchers to be agile and flexible in adapting their research to those changes.

Our study also highlights the complexity of being a practice-based researcher from within a context. Subjectivity and positionality statements often challenged researchers initially because many had never thought about how their experiences, beliefs, and attitudes influence their work or about how positions of power may influence research. They might also experience conflicts in their role as a researcher and actor within the context. Through the reflective process of writing these statements, many researchers were better positioned to recognize when the data they analyzed did not align with their initial hunches or inclinations. Such revelations are powerful for individuals conducting practice-based research and for how study results may influence the context. While no subjectivity or positionality statements were found in five quantitative dissertations, it is important to recognize that a researcher's background, beliefs, and experiences influence all research regardless of its design or methods used. Subjectivity or positionality statements are essential for all involved in practice-based scholarship, and when conducted within a partnership, it is important that researchers from inside and outside the context share their positionalities openly and explicitly address how, in combination, they influence the research.

Conclusion

This study sought to broaden perspectives on what practice-based scholarship in educational technology can look like and what it can accomplish. Our findings show that practice-based scholarship related to learning technologies can generate meaningful insights and have powerful implications for educational contexts. We analyzed practice-based scholarship within an online EdD program because these programs provide opportunities for institutions of higher education to contribute valuable and practical educational technology research across a range of disciplines. Given the increasing number of EdD programs and professional students conducting practice-based dissertations in their contexts, further analyses of these dissertations, the types of research conducted, the challenges faced, and the communities and stakeholders who are impacted can provide additional insight into educational technology research that directly addresses real-world needs and problems.

The purpose of this article was neither to analyze our program nor provide recommendations for others wishing to design or improve similar programs, but we have written extensively about this elsewhere (Kumar & Dawson, 2018). Instead, our goal was to broaden viewpoints of practice-based scholarship so that practitioners, regardless of whether they are pursuing a doctoral degree, can consider how problems they experience in their practice may be studied and potentially addressed. Academic researchers who collaborate with practitioners may also gain insights into how practice-based scholarship differs from traditional academic research. Practitioners and, if applicable, educational researchers they collaborate with, may also develop a more robust understanding of the complexities associated with practice-based research scholarship.

We hope this study also contributes to more visibility for practice-based scholarship. Such scholarship is often not published or shared beyond the local context due to its highly contextual nature and because researchers doing this type of work often have little incentive or support to share beyond their context. We encourage practice-based scholars and their supervisors to consider sharing their work beyond their local contexts. Lack of dissemination outlets interested in publishing practice-based scholarship can also hinders its visibility. Editors, leaders of professional organizations, conference organizers and leaders in our field can play an important role by intentionally creating space for the dissemination and recognition of practice-based scholarship.

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